Amendments to the Claims

The listing of claims below is intended to replace all prior listings of claims presented in the above-identified application.

Claims 1-16 (canceled).

17. (currently amended) A method for analysis comprising:

providing an electrospray device ~~having flow-contacting portions comprising an affinity chromatographic adsorbent; and~~ comprising:

a substrate having:

a) an injection surface,

b) an ejection surface opposing the injection surface, wherein the substrate has at least one spray unit which comprises:

an entrance orifice on the injection surface,

an exit orifice on the ejection surface,

a channel extending through the substrate between the entrance orifice and the exit orifice, and

a recess extending into the ejection surface and surrounding the exit orifice,

c) polymerized separation material comprising affinity chromatographic adsorbent, wherein the separation material is associated with said electrospray device at a location suitable to effect chromatographic separation of analytes passing through said electrospray device, and

d) an electric field generating source positioned to define an electric field surrounding at least one exit orifice; and

selectively immobilizing affinity ligands on the ~~flow-contacting surface~~ polymerized separation material of the device.

18. (original) The method of claim 17, wherein said affinity chromatographic adsorbent comprises an immobilized metal ion chelating ligand.

19. (original) The method of claim 18, wherein said immobilized metal ion chelating ligand comprises iminodiacetic acid, nitrilo triacetic acid, or tris(carboxymethyl) ethylene diamine.

20. (original) The method of claim 17, wherein said affinity chromatographic adsorbent comprises an immobilized ligand molecule comprising an organic compound, fatty acid, inhibitor, protein, peptide, enzyme, coenzyme, receptor, affinity tag, nucleic acid, antibody, biotin, avidin, carbohydrate, lectin, dye, or protein surface domain involved in molecular recognition.

21. (original) The method of claim 20, wherein said immobilized ligand molecule comprises a potential drug candidate or a mixture with potential drug candidates from a combinatorial compound library, benzamidine, D-biotin, biotinylated molecules, Avidin, Protein A, antisense peptides, antisense Arg-vasopressin peptide, trypsin, adenosine 5'-monophosphate (5'-AMP), Interleukin-2 receptor, polyamino acids, polyhistidine, histidine, lysine, a fragment of calf thymus DNA, sheep anti-rabbit IgG, monosaccharide, monosaccharide derivative, concanavalin A, or Cibacron Blue F3G-A.

22. (currently amended) The method of claim 17, wherein said device further comprises a micro column in fluid communication with said ~~flow-contacting portions~~ polymerized separation material and having an affinity chromatographic adsorbent within said micro column, said method further comprising selectively immobilizing affinity ligands on the ~~flow-contacting surface~~ polymerized separation material within said micro column.

23. (original) The method of claim 22, wherein said affinity chromatographic adsorbent within said micro column comprises an immobilized metal ion chelating ligand.

24. (original) The method of claim 23, wherein said immobilized metal ion chelating ligand comprises iminodiacetic acid, nitrilo triacetic acid, or tris(carboxymethyl) ethylene diamine.

25. (original) The method of claim 22, wherein said affinity chromatographic adsorbent comprises an immobilized ligand molecule comprising an organic compound, fatty acid, inhibitor, protein, peptide, enzyme, coenzyme, receptor, affinity tag, nucleic acid, antibody, biotin, avidin, carbohydrate, lectin, dye, or protein surface domain involved in molecular recognition.

26. (original) The method of claim 25, wherein said immobilized ligand molecule comprises a potential drug candidate or a mixture with potential drug candidates from a combinatorial compound library, benzamidine, D-biotin, biotinylated molecules, Avidin, Protein A, antisense peptides, antisense Arg-vasopressin peptide, trypsin, adenosine 5'-monophosphate (5'-AMP), Interleukin-2 receptor, polyamino acids, polyhistidine, histidine, lysine, a fragment of calf thymus DNA, sheep anti-rabbit IgG, monosaccharide, monosaccharide derivative, concanavalin A, or Cibacron Blue F3G-A.

Claims 27-38 (canceled).

39. (currently amended) A method for analysis comprising:

providing ~~an~~ the electrospray device according to claim 17, said electrospray device further comprising ~~a monolithic silicon microchip having~~ an array of multiple ~~inlet reservoirs~~ injection surfaces in fluid communication with a respective one of an array of multiple ~~nozzles~~ exit orifices through a channel and a capillary tube in fluid communication with an ~~inlet reservoir~~ injection surface, wherein at least one of the ~~reservoir~~ injection surface/channel and capillary tube contain at least one immobilized affinity chromatographic adsorbent;

selectively binding an analyte on said affinity chromatographic adsorbent by affinity capture;

optionally, performing chemical, enzymatic, or physical treatment of said immobilized analyte;

selectively desorbing said analyte;

electrospraying said desorbed analyte; and

passing said electrosprayed analyte to a detector.

40. (original) The method of claim 39, wherein said affinity chromatographic adsorbent comprises an immobilized metal ion chelating ligand.

41. (original) The method of claim 40, wherein said immobilized metal ion chelating ligand comprises iminodiacetic acid, nitrilo triacetic acid, or tris(carboxymethyl) ethylene diamine.

42. (original) The method of claim 39, wherein said affinity chromatographic adsorbent comprises an immobilized ligand molecule comprising an organic compound, fatty acid, inhibitor, protein, peptide, enzyme, coenzyme, receptor, affinity tag, nucleic acid, antibody, biotin, avidin, carbohydrate, lectin, dye, or protein surface domain involved in molecular recognition.

43. (original) The method of claim 42, wherein said immobilized ligand molecule comprises a potential drug candidate or a mixture with potential drug candidates from a combinatorial compound library, benzamidine, D-biotin, biotinylated molecules, Avidin, Protein A, antisense peptides, antisense Arg-vasopressin peptide, trypsin, adenosine 5'-monophosphate (5'-AMP), Interleukin-2 receptor, polyamino acids, polyhistidine, histidine, lysine, a fragment of calf thymus DNA, sheep anti-rabbit IgG, monosaccharide, monosaccharide derivative, concanavalin A, or Cibacron Blue F3G-A.

44. (original) The method of claim 39, wherein said device comprises a micro column and has an affinity chromatographic adsorbent within said micro column, said method further comprises selectively binding an analyte on said affinity chromatographic adsorbent within said micro column by affinity capture.

45. (original) The method of claim 39, further comprising performing multiple analyses of one or more analytes, including at least one of affinity binding, chemical, enzymatic, and physical modifications of the analytes.

46. (original) The method of claim 39, wherein said affinity binding, chemical, enzymatic, or physical modification, and elution of the analytes is carried out in a two-dimensional mode.

47. (original) The method of claim 39, wherein said detector is a mass spectrometer.

Claims 48-55 (canceled).